Objective.– Evaluation of clinical, radiological, and functional benefits of brace treatment in patients aged over 70 years.
Patients and methods.– Retrospective study on 30 patients over 70 years we have treated, with a follow of one year after the beginning of the brace.
All patients had impaired spinal posture. They received a thoracolumbar or lumbar polyethylene bivalve brace carried the day for 6 months and on demand thereafter.
We lead a clinical, radiological and functional (EVA and quality of life) evaluation.
Results.– We found little decrease in Cobb angle of scoliosis (–5° on average). The occipital axis is normalized, from a 20 mm heel on average, it rises to 8 mm with the brace (55% correction). In the sagittal plane, improves lordosis averaged 10°, 8° of kyphosis, and C7 plumb line moves back to its normal position of 15 mm. Clinically the arrow of C7 going from 98 mm to 63 mm. Orthopedic treatment lowers four points on the VAS (52% improvement) and 55% across St. Antoine. QUEBEC scores and HAD are reduced by 25% and 10%).
At one year, all patients still wear the brace on average 6 hours per day, their index of subjective satisfaction is around 75% on pain, and 70% of the posture.
Discussion.– The brace makes a correction in the sagittal and frontal plane. It has undeniably an analgesic effect, which allows an improved quality of life. It is an effective adjunct to functional treatment and an alternative for non-indication or contra-indication for surgery. We prescribe it combined with rehabilitation treatment, which seems essential.

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Radiological parameters of sagittal plane in children with cerebral palsy walking or wandering

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Keywords: Cerebral palsy; Children; Radiological parameters
The population of cerebral palsy (CP) walking or wandering has often an abnormal profile clinically unlike same age's adolescents without neuro-motor dysfunction. So we wanted in this work to realize a radiological assessment of the static data in the spine-pelvis-thigh complex in children with CP and made a comparison with an asymptomatic population.
The population of CP is made up 119 children and the asymptomatic population up 652 children. The radiographs of the sagittal plane, in large format (30cm × 90 cm) are realized in a comfortable position, knees and hips in maximal extension. Analyses were performed using the Optispine® software to measure radiological parameters of the whole spine-pelvis-thigh.
Comparing the two populations, we found no difference in the shape parameter (pelvic incidence), for against a significant difference was demonstrated on the positional parameters (pelvic tilt and sacral slope) of the pelvis. Regarding the spine, we found a difference in the angulation of lumbar lordosis and the orientation of the latter as well as the number of vertebrae included in the kyphosis and its orientation. There is also a significant difference in the C7 plumbline.
We can say that the CP population is not specifically different from the control population. Growth disrupts the settings with the need to prevent these troubles as soon as possible to the condition to be concerned and be able to search for.

Further reading
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How repetitive trunk movements affect estimates of local stability? A pilot study

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Keywords: Stability; Trunk; Kinematics
Objectives.– Stability refers to the ability to offset an external perturbation. However the spine stability can also refer to the ability of the motor system to reliably perform in a variety of task constraints. Recent studies [1,2] have estimated this dynamic stability using non-linear approaches with the maximum Lyapunov exponent (λ_{max}) during limited repetitive movements only in the sagittal plane. The goal was to test λ_{max} in simple and complex tasks involving the trunk and determine the number of repetitions needed in order to provide useful and ecologic tools to assess LBP patients.
Materials and methods.– Ten healthy volunteers performed 100 trunk movements at fixed pace in flexion, twist and both movements. Markers (LED) were attached to the trunk at the level of T6 (2) and S1 (1). LED movements were recorded with an active 3D movement registration system (Optotrak®) consisting of a 3 × 3 camera array. λ_{max} describing responses to extremely small perturbations was calculated from the trunk kinematics to estimate the local dynamic stability of the system.
Results.– The preliminary results of multiple comparisons showed that the 30 repetitions were not different from each other, limiting the role of fatigue and of the length of data series for interpretation. The rotation tasks seemed to be, in first approximation, more stable than the others (flexion and complex tasks). Moreover it seemed that variability of movement between pelvis and thorax was lower than variability of either segment.
Conclusion.– Repetitive motion analysis is suitable for trunk stability analysis using limited repetitions. This study provides insight into the use of λ_{max} in trunk local stability. Comparing type of movement, it seems that we have better options to control segments relative to each other than to control segments in space.

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Linear analysis of postural data in idiopathic scoliosis

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Keywords: Posturology, Idiopathic scoliosis, Fourier
Introduction and purpose.– Idiopathic scoliosis (IS) is a common disorder. Its prevalence is variable according to the authors (20 to 30/1000) [1]. In the IS, spinal deformations in the three anatomical planes lead to a modification of the characteristics of regulation of the balance [2]. Posturography is a useful tool for assessing the balance of a subject. However, the frequency analysis of the oscillations based on the model of fast Fourier transforms (FFT) is still delicate. We propose a method to better read the FFT.